



Docket No. 00800.019US2  
WD # 476812.wpd

WARF Ref. No. P01278US-PO86 (MEJ)

**Clean Version of Pending Claims**

**DNA ENCODING A DNA REPAIR PROTEIN**

Applicant: John H.J. Petrini et al.  
Serial No.: 09/837,602

- E1*
1. (Twice amended) An isolated and purified nucleic acid molecule encoding a vertebrate DNA repair polypeptide having SEQ ID NO:2, or a biologically active fragment thereof, wherein the polypeptide has a molecular weight of about 95000 Da as determined by SDS-PAGE.
2. (Amended) The nucleic acid molecule of claim 1 which has SEQ ID NO:1.
- E2*
4. (Amended) An isolated and purified DNA molecule consisting of SEQ ID NO:1, or a DNA molecule complementary thereto.
- INS I1*
20. (Amended) An isolated nucleic acid molecule comprising a promoter operably linked to a nucleic acid segment encoding SEQ ID NO:2.
- E3*
21. (Amended) The nucleic acid molecule of claim 20 wherein the nucleic acid segment has SEQ ID NO:1.
22. (Amended) An isolated nucleic acid molecule comprising a promoter operably linked to a nucleic acid segment which encodes a fusion polypeptide comprising at least a portion of a DNA repair polypeptide which binds an antibody specific for SEQ ID NO:2.
- E4*
23. (New) An isolated and purified nucleic acid molecule encoding a vertebrate DNA repair polypeptide, or a biologically active fragment thereof, wherein the polypeptide has a molecular weight of about 95000 Da as determined by SDS-PAGE, wherein the nucleic acid molecule has SEQ ID NO:1.

24. (New) The nucleic acid molecule of claim 1, 4, 20, 22 or 23 which is labeled.
25. (New) The nucleic acid molecule of claim 22 wherein the portion of the DNA repair polypeptide includes residues 399 to 751 of SEQ ID NO:2.
26. (New) The nucleic acid molecule of claim 22 wherein the fusion polypeptide is a fusion of glutathione S-transferase and at least a portion of the DNA repair polypeptide.
27. (New) The nucleic acid molecule of claim 22 wherein the fusion polypeptide is a fusion of a histidine tag and at least a portion of the DNA repair polypeptide.
28. (New) The nucleic acid molecule of claim 1 wherein the fragment of SEQ ID NO:2 is immunogenic, binds DNA, forms a complex with hMre11/hRad50, or has nuclease activity when associated with hMre11/hRad50.
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